

CLAIMS

1. A novel crystal of
7- [2- (2-aminothiazol-4-yl) -2-hydroxyiminoacetamide] -3-vinyl
5 -3-cephem-4-carboxylic acid (syn isomer) , characterized in that
it exhibits peaks at diffraction angles shown in the following
Table 1, in its powder X ray diffraction pattern:

Table 1

Diffraction Angle 2θ (°)
approximately 11.7
approximately 16.1
approximately 18.6
approximately 21.2
approximately 22.3
approximately 24.4
approximately 26.2

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2. The novel crystal of
7- [2- (2-aminothiazol-4-yl) -2-hydroxyiminoacetamide] -3-vinyl
-3-cephem-4-carboxylic acid (syn isomer) according to Claim 1,
obtained by crystallization in an acidic state of a solution
15 containing
7- [2- (2-aminothiazol-4-yl) -2-hydroxyiminoacetamide] -3-vinyl
-3-cephem-4-carboxylic acid (syn isomer) in a temperature range
of -5°C to 5°C.

3. The novel crystal of
7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl
-3-cephem-4-carboxylic acid (syn isomer) according to Claim 1
or 2, wherein the solution containing

5 7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl
-3-cephem-4-carboxylic acid (syn isomer) is an aqueous solution
of an alkali metal salt of the compound.

4. The novel crystal of
7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl
10 -3-cephem-4-carboxylic acid (syn isomer) according to any of
Claims 1 to 3, obtained by controlling pH of an aqueous sodium
hydrogen carbonate solution of

7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl
-3-cephem-4-carboxylic acid (syn isomer) at from 1 to 3 while
15 cooling the solution in a temperature range from -5°C to 5°C.

5. A method for preparing a novel crystal of
7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl
-3-cephem-4-carboxylic acid (syn isomer), comprising
acidifying a solution containing
20 7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl
-3-cephem-4-carboxylic acid (syn isomer) in a temperature range
from -5°C to 5°C to cause formation of a crystal.

6. The method for preparing a novel crystal of
7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl
25 -3-cephem-4-carboxylic acid (syn isomer) according to Claim 5,
wherein the acidic state of the solution includes pH values of
1 to 3.

7. The method for preparing a novel crystal of
7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl
-3-cephem-4-carboxylic acid (syn isomer) according to Claim 5
or 6, wherein the solution containing

5 7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl
-3-cephem-4-carboxylic acid (syn isomer) is an aqueous solution
of an alkali metal salt of the compound.

8. The method for preparing a novel crystal of
7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl
10 -3-cephem-4-carboxylic acid (syn isomer) according to any of
Claims 5 to 7, wherein the temperature of the solution under
an acidic state is 0°C to 2°C.

9. A method for preparing an anhydrous form of a novel crystal
of
15 7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl
-3-cephem-4-carboxylic acid (syn isomer), wherein a novel
crystal obtained by the method according to any of Claims 5 to
8 is further frozen at temperatures from -5°C to -80°C, and then
subjected to vacuum drying.

20 10. The method for preparing an anhydrous form of a novel
crystal of
7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamide]-3-vinyl
-3-cephem-4-carboxylic acid (syn isomer) according to Claim 9,
wherein the conditions for vacuum drying include a degree of
25 vacuum of 0.1 to 0.001 mmHg and a temperature of -20 to 35°C.